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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/304,830	05/05/1999	MASOUD SAJADIEH	SAJADIEH1-13	1222

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EXAMINER

ABELSON, RONALD B

ART UNIT	PAPER NUMBER
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2663

DATE MAILED: 08/13/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/304,830

Applicant(s)

SAJADIEH ET AL.

Examiner

Ronald Abelson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 May 1999.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 May 1999 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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Claim Objections

1. Claim 1 is objected to because of the following informalities: The use of the phrase "adapted to" may make the subsequent steps optional. Appropriate correction is required.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, and 5-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (US 6,341,140) in view of the Wynn (US 6,313,738) and the applicant's admitted prior art.

Regarding claims 1, 7, and 10, Lee teaches a method and apparatus for frame/code synchronization in a multiplexed environment (col. 1 lines 8 -12).). The system comprises a bandpass filter (fig. 2 box 21-1) and a correlator (fig. 2 box 24-1).

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Wynn teaches that in an OFDM/FDM environment bandpass filters maybe a signal acoustic wave (SAW) filters. Wynn shows that in this environment SAW filters can be made highly selective to remove unwanted signals (fig. 4 channels 304, 308, col. 3 lines 25 32). Note, the applicant's admitted prior art teaches the desirability of removing the Upper 1st Analog Signal (fig. 9, pg. 6 line 24 - pg. 7 line 7). It is obvious that the Host Analog Signal (fig. 9) is also not desired for synchronization. The applicant teaches a highly selective SAW filter to remove the undesired Analog Signals (spec: pg. 10 lines 12-23)

The applicant's admitted prior art teaches frame synchronization in an OFDM environment via the use of "prefix extension" or "cyclic extension" (spec: pg. 3 lines 8 - 30).

Therefore it would have been obvious to one of ordinary skill in the art, having both Lee and the combination of Wynn and the applicant's admitted prior art before him/her and with the teachings [a] as shown by Lee, frame/code synchronization in a multiplexed environment, and [b] as shown by the combination of Wynn and the applicant's admitted prior art, that SAW filters are used in an OFDM/FDM environment and synchronization of OFDM signals is performed using "prefix extension" or "cyclic extension", to be motivated to modify the system of Lee that

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replacing the bandpass filter (Lee fig. 1 box 21-1) with a SAW filter and transmitting OFDM data with a "prefix extension" or "cyclic extension". This modification of the system of Lee would make it more versatile by allowing it to synchronize OFDM signals.

Regarding claim 2, significant portion of at least one digital channel is a portion in a frequency domain farthest from the center frequency of an analog channel contained in the OFDM signal. It would be obvious to remove the interference caused by the first adjacent OFDM channel (spec: fig. 9 element CI, pg. 6 lines 24 - 30).

Regarding claim 5, 8, and 11, the bandpass filter is digital (Wynn: fig. 8, col. 4 lines 31 - 45).

Regarding claim 6, 9, and 12, sync signal based on an integrated detection of respectively correlated cyclically extended portions of a plurality of data frames (spec: fig. 7, pg. 4 line 23 - pg. 5 line 30).

3. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Lee, Wynn, and the applicant's admitted prior art as applied to claim 1 above, and further in view of Hunsinger (US 5,745,525).

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The combination of Lee, Wynn, and the applicant's admitted prior art fails to teach removing a significant portion of each of the two digital channels where these portions are farthest from the center frequency of an analog channel contained in the OFDM signal.

Hunsinger teaches that conventional analog FM signals are typically disposed in the areas farthest from the center frequency of an analog channel contained in the OFDM signal (fig. 19A, col. 16 line 66 - col. 17 line 9).

Therefore it would have been obvious to one of ordinary skill in the art, having both the combination of Lee, Wynn, and the applicant's admitted prior art and Hunsinger before him/her and with the teachings [a] as shown by the combination of Lee, Wynn, and the applicant's admitted prior art, a frame synchronizer for an OFDM signal, and [b] as shown by Hunsinger, conventional analog FM signals are typically disposed in the areas farthest from the center frequency of an analog channel contained in the OFDM signal, to be motivated to modify the system of the combination of Lee, Wynn, and the applicant's admitted prior art by modifying the characteristics of the bandpass filter (Lee: fig. 2 box 21-1) to account for interference in both the lower as well as upper sidebands. This could be accomplished by changing the filter coefficients. This

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would improve the system by removing some of the interference caused by low frequency analog signals.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ronald Abelson whose telephone number is (703) 306-5622. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on (703) 308-5340. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-9600.



Ronald Abelson
Examiner
Art Unit 2663



July 29, 2002



MELVIN MARCELO
PRIMARY EXAMINER

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Attachment for PTO-948 (Rev. 03/01, or earlier)
6/18/01

The below text replaces the pre-printed text under the heading, "Information on How to Effect Drawing Changes," on the back of the PTO-948 (Rev. 03/01, or earlier) form.

INFORMATION ON HOW TO EFFECT DRAWING CHANGES

1. Correction of Informalities -- 37 CFR 1.85

New corrected drawings must be filed with the changes incorporated therein. Identifying indicia, if provided, should include the title of the invention, inventor's name, and application number, or docket number (if any) if an application number has not been assigned to the application. If this information is provided, it must be placed on the front of each sheet and centered within the top margin. If corrected drawings are required in a Notice of Allowability (PTOL-37), the new drawings **MUST** be filed within the **THREE MONTH** shortened statutory period set for reply in the Notice of Allowability. Extensions of time may NOT be obtained under the provisions of 37 CFR 1.136(a) or (b) for filing the corrected drawings after the mailing of a Notice of Allowability. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftsperson.

2. Corrections other than Informalities Noted by Draftsperson on form PTO-948.

All changes to the drawings, other than informalities noted by the Draftsperson, **MUST** be made in the same manner as above except that, normally, a highlighted (preferably red ink) sketch of the changes to be incorporated into the new drawings **MUST** be approved by the examiner before the application will be allowed. No changes will be permitted to be made other than correction of informalities, unless the examiner has approved the proposed changes.

Timing of Corrections

Applicant is required to submit the drawing corrections within the time period set in the attached Office communication. See 37 CFR 1.85(a).

Failure to take corrective action within the set period will result in **ABANDONMENT** of the application.